

<p style="text-align: center;">1</p> <p style="text-align: center;">UNITED STATES DISTRICT COURT EASTERN DISTRICT OF MICHIGAN SOUTHERN DIVISION</p> <hr/> <p>FRED W. KERNS, JR., Plaintiff,</p> <p>vs. Case No. 12-cv-13201</p> <p>MCKEIL WORK BOATS LIMITED, a Foreign corporation, MCKEIL MARINE LIMITED, and ESSAR STEEL ALGOMA, INC., Defendants.</p> <p>and SEABRIGHT INSURANCE COMPANY, Intervening Plaintiff.</p> <hr/> <p style="text-align: center;">DEPOSITION UPON ORAL EXAMINATION OF STEVEN F. WIKER, Ph.D.</p> <hr/> <p>DATE: January 7, 2014 REPORTED BY: Holly J. Buckmaster, RPR CSR No. 2859</p>	<p style="text-align: right;">3</p> <p style="text-align: center;">INDEX OF EXAMINATIONS</p> <p style="text-align: right;">Page Line</p> <p>By Mr. Miles..... 4 15 By Mr. Jordan..... 79 10 By Mr. Miles..... 149 2 By Mr. Beaton..... 150 19</p> <p style="text-align: center;">INDEX OF EXHIBITS</p> <p style="text-align: right;">PAGE LINE</p> <p>1 Report from Steven F. Wiker, Ph.D., dated November 15, 2013..... 4 10</p> <p>2 Record of testimony history of Steven F. Wiker, Ph.D..... 4 10</p> <p>3 Fee schedule for Dr. Wiker..... 140 18</p> <p>4 Curriculum Vitae..... 140 18</p>
<p style="text-align: right;">2</p> <p style="text-align: center;">A P P E A R A N C E S:</p> <p>For Plaintiff: D. BRUCE BEATON Attorney at Law LAW OFFICES OF D. BRUCE BEATON 137 S. Water Street Marine City, Michigan 48039 800-716-7388 Appeared on behalf of Kerns</p> <p>For Defendant: BRIAN J. MILES Attorney at Law D'LUGE, MILES, MILES & CAMERON, P.L.C. 67 N. Walnut Mt. Clemens, Michigan 48043 586-468-7511 Appeared on behalf of McKeil Work Boats</p> <p>TIMOTHY J. JORDAN Attorney At Law GARAN, LUCOW, MILLER P.C. 1000 Woodbridge Street Detroit, Michigan 48207 313-446-5531 Appeared on behalf of Essar Steel</p>	<p style="text-align: right;">4</p> <p>SEATTLE, WASHINGTON; TUESDAY, JANUARY 7, 2014</p> <p>9:30 A.M.</p> <p>--oOo--</p> <p>STEVEN F. WIKER, Ph.D., The deponent herein being first duly sworn testified as follows:</p> <p>(Exhibits 1 and 2 were marked for identification.)</p> <p style="text-align: center;">E X A M I N A T I O N</p> <p>BY MR. MILES:</p> <p>Q. Dr. Wiker, I am Brian Miles and I represent the McKeil defendants in the lawsuit that has been brought by Fred Kerns in the federal court in Detroit and I am just here to ask you some questions about your opinions in this case.</p> <p>Before we get started, I have asked the court reporter ahead of time to mark as Exhibits 1 and 2 your report and testimony lists respectively, if you could just look those exhibits over and assure me that they are complete and accurate copies of your report</p>

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- 1 Q. That is still better than your .25?
- 2 A. Yeah.
- 3 Q. So what do you conclude from that?
- 4 A. Well, if he is walking with a normal gait and there
- 5 is no debris on the surface at all, then if there was
- 6 taconite on it and he was to stand directly on it, so
- 7 that your loading on top is the static coefficient of
- 8 friction test would evaluate, then he would be just
- 9 above -- the available coefficient of friction would
- 10 be just above what normal gait requirements are, but
- 11 in --
- 12 Q. So let me stop you. So in normal gait, you would not
- 13 expect there to be a slipping hazard at that level
- 14 that you measured?
- 15 A. For that coefficient of friction.
- 16 Q. Right.
- 17 A. But later in the report, I explain the problem with a
- 18 heel strike, which we can go into in a minute, but
- 19 when you have a heel strike involved, where the foot
- 20 is out in front, then the force vectors have a
- 21 horizontal component to it, so the taconite is like a
- 22 rolling marble, then that is a different kind of
- 23 exposure than just a direct load.
- 24 So I am going to take my cell phone, I am
- 25 going to lay it on my palm, my palm is facing upward

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- 1 and what I do then for the coefficient of friction
- 2 testing is I push exactly horizontal against the shoe
- 3 over that surface, okay, just to get movement. So
- 4 that's a coefficient of friction test.
- 5 And the reason why we follow that procedure
- 6 is that any engineer, you can give these shoes and
- 7 taconite pellets to another engineer or specialist,
- 8 they can run the tests and they are going to get what
- 9 I found, okay? Approximately. There is not going to
- 10 be much variation in that, so -- because the
- 11 procedures are very standardized.
- 12 Now, when you do a heel strike and your foot
- 13 is coming down, so now my cell phone is looking like a
- 14 foot, the bottom part here, it is about a 45 degree
- 15 tilt, the bottom part is going to strike the surface
- 16 and then the foot will rotate down onto the deck or
- 17 whatever the contaminate is and when you are doing
- 18 that, the foot is actually pushing initially, there is
- 19 a need for the friction to resist that heel strike and
- 20 the foot movement horizontally and then you will start
- 21 to walk over it, so you will stand over and you will
- 22 rotate and it is called the loading phase, so the
- 23 coefficient of friction that we are testing is the
- 24 loading phase of the gait pattern, but the heel strike
- 25 can require greater coefficient of friction to prevent

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- 1 the foot from slipping.
- 2 So if you had the taconite pellets in
- 3 there -- and maybe after a break we can bring them up
- 4 in here and you can play with it, but you will see
- 5 that it doesn't take much effort to cause those things
- 6 to roll and that when you have the shoe on top of it,
- 7 it is -- it is noticeably difficult to stabilize the
- 8 foot with a shoe on that.
- 9 Q. So based on your testing, you concluded that with the
- 10 heel strike, there would be a slipping hazard with
- 11 respect to the taconite pellets on the steel deck?
- 12 A. You would have a problem with that. You know, I did
- 13 a very pro -- I don't want to call it pro defense, but
- 14 I took a position in doing the tests that was not in
- 15 the plaintiff's favor, it was in the defense favor.
- 16 Then the reason I put in the rough
- 17 concrete -- well, it is not rough.
- 18 Q. Before you start that, let me ask what do you mean by
- 19 you did it in the defense favor, how did you --
- 20 A. When you are testing this, I didn't do a heel strike
- 21 test, I just did a standard coefficient of friction
- 22 test, okay? If you have any dynamic load onto the
- 23 deck, then the forces are going to be much greater and
- 24 when that happens, then you are going to get a lower
- 25 dynamic coefficient of friction, so I didn't do a

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- 1 dynamic coefficient of friction test, I did a static.
- 2 I don't know if that is making a lot of sense because
- 3 you are looking at me as if --
- 4 Q. I am processing it.
- 5 A. Okay.
- 6 Q. And even under the static test, which is a less
- 7 onerous standard is what I am gathering from what you
- 8 are telling me, there would still be a slip hazard
- 9 with the taconite pellets on the steel deck?
- 10 A. Because of the nature of the heel strike. Because
- 11 that is not a static load, that is a dynamic
- 12 interaction.
- 13 Q. The horizontal force?
- 14 A. Yes. And just to let you know that the sheet steel
- 15 test that I did here doesn't really represent what I
- 16 saw in the photos on the walking surface on the barge.
- 17 That has oxidation and dirt and it looks rough, it is
- 18 not a smooth steel surface, a glistening surface like
- 19 I tested here.
- 20 Q. Right.
- 21 A. It is more like the brushed concrete surface, where
- 22 you are going to have undulations, you know, small
- 23 small ones and then you have the taconite in there
- 24 embedded in the dirt and then you test that and you
- 25 can see that the coefficient of friction, when there

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- 1 surface, if those were representative of the surface
 2 at the time he was walking on it, you could embed the
 3 taconite within the dirt, but I didn't see any
 4 petroleum distillates on the surface in those photos,
 5 I didn't see any other evidence other than sandy dirt.
 6 And then I saw evidence of taconite -- it looked like
 7 taconite ore, somebody had pulled it off of the other
 8 deck and was holding it in their hand, I believe.
- 9 Q. Are you talking about the photographs of the deck of
 10 the vessel, is that what you are referring to?
- 11 A. No.
- 12 Q. Are you referring to from the dock inspection?
- 13 A. I don't know what the inspection is. All I can see
 14 is that somebody is holding what it looks like
 15 taconite ore in their hand.
- 16 Q. Could the coefficient of friction have dropped to the
 17 point that it would cause a slip such as Mr. Kerns
 18 experienced if he had stepped on a hard stone as
 19 opposed to a taconite pellet?
- 20 MR. BEATON: Objection; speculation, assumes
 21 facts not in evidence.
- 22 A. That is a hypothetical, but here --
- 23 Q. I am sorry, was that a yes?
- 24 A. I was just classifying that.
- 25 Q. I thought I heard you say "yes." I wanted to clarify

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- 1 whether you did or not?
- 2 A. I didn't. I said that is a hypothetical. So I
 3 didn't test the coefficient of friction with taconite
 4 ore or the rocks that you can see in the photos, those
 5 items have irregular shapes and they would tend not to
 6 roll, so when you step on this them, then it would be
 7 more like a sliding action.
- 8 Q. Right.
- 9 A. Where it could be similar to embedding in the sole
 10 and having a hard surface between the sole and the
 11 walking surface.
- 12 Q. That is what I am asking is whether that is one
 13 potential cause of the slip would be hard objects such
 14 as that that could cause a skating effect?
- 15 MR. BEATON: Same objection.
- 16 A. Well, what I can say is that the sand or the dirt or
 17 the rocks that are on the walking surface on the deck
 18 potentially reduce the coefficient of friction and the
 19 coefficient of friction reduction with the taconite is
 20 very high.
- 21 The testimony that I saw in the depositions
 22 is it wasn't unusual for them to walk on dirt, that
 23 there would be some dirt on the deck in the areas
 24 where the -- wherever they walked, so to them, and I
 25 think this is the kernel of the problem here, is that

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- 1 they considered walking on the dirt to be okay, so
 2 they -- the foreman who inspected the area and said it
 3 was okay, it was clear to go ahead and do the
 4 off-loading, the people loaded the material onto the
 5 barge, they saw the dirt but they didn't consider that
 6 to be a hazard.
- 7 Where the problem lies is that taconite
 8 pellets can be integrated into that dirt and almost in
 9 a camouflage state, it is not easy to see them if it
 10 is embedded in a pile of dirt, but once you step on
 11 that, the taconite significantly reduces your
 12 coefficient of friction, even in the presence of dirt
 13 and you roll and when Mr. Kerns fell, he looked around
 14 and he saw the taconite pellets. If they had been
 15 walking on dirt in the past and not fallen, then that
 16 would argue that the taconite pellets were the source
 17 of his abrupt slip and fall.
- 18 Q. I understand what you just said, I still pose the
 19 question if there were stones or hard rocks embedded
 20 in the dirt rather than taconite in the area where he
 21 stepped, is the stone or hard rock in that -- embedded
 22 in that dirt meeting his foot something that could
 23 also reduce the coefficient of friction to the point
 24 of causing his foot to slip and fall?
- 25 MR. BEATON: Objection; asked and answered.

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- 1 A. Yeah, what I am saying is the sandy dirt or the rocks
 2 that you see in the photos, they would serve to reduce
 3 the coefficient of friction. I don't know how much
 4 because I didn't test those rocks, but since they have
 5 been walking on it in the past and they did not
 6 consider it hazardous to walk on that, it would
 7 indicate to me that they had essentially tested the
 8 available coefficient of friction and it was
 9 acceptable to them. So if you ran --
- 10 Q. Well --
- 11 A. Let me finish.
- 12 So if you ran tests, it is probably going to
 13 show that there is a reduction in the coefficient of
 14 friction but not to the point where one might consider
 15 it hazardous. I don't know what that reduction is
 16 going to be, but it is nothing -- I can tell you that
 17 it would not be like taconite because the rocks are
 18 not going to roll, they are going to slide.
- 19 Q. I understand but --
- 20 A. And if you have dirt and you are sliding, the rocks
 21 and the dirt then, that clay in the dirt can have
 22 adhesive properties in the slip and the coulomb
 23 friction and so if you are walking on it and you
 24 feel -- you know, when people walk on surfaces, they
 25 are detecting micro slips and when you walk around in

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1 longshoring operations for this particular area
 2 because there must be something in there that they
 3 want that is either more stringent or has a more
 4 industry supportive approach to the problem, but they
 5 are not telling you you don't have to worry about this
 6 if you are a longshoreman, those safety and health
 7 regulations, those that apply to all of the other US
 8 industry, those don't apply to you.

9 Q. I am not suggesting that that is what it means, I am
 10 suggesting that the specific section 1910 of CFR does
 11 not apply to longshoring operations. There may be
 12 comparable standards that are integrated into the
 13 specific section of the code that deals with
 14 longshoring, but 1910 does not apply, would you agree
 15 with that?

16 A. Well, the purpose that I put it in here is it is
 17 talking about health and safety, federal health and
 18 safety regs are applicable to general industry, okay,
 19 so general industry. To me, the way I wrote this is
 20 industry at large, so if you have regs that tell you
 21 that this is a hazard for general industry, you should
 22 know it is a hazard for longshoring operations. Why
 23 they are referring you to longshoring operations, I
 24 would have to look at the longshoring regs to see how
 25 they integrated safe walkways.

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1 barge, I am going to make sure that the loading is
 2 done safely and appropriately and if I see hazards
 3 develop in that process, I am going to eliminate the
 4 hazards.

5 How I do it may be that I talk to the steel
 6 company and say, hey, you put this on my vessel, I
 7 want you to remove it and there may be an agreement
 8 that I will do it as the vessel master, but that has
 9 to be handled.

10 So, for example, the vessel master could have
 11 said you put the dirt and the taconite on my deck and
 12 I want the taconite removed, I want you to clean up
 13 the mess that you created when you loaded onto my
 14 vessel. They may clean it and it may be partially
 15 clean, then if you pull away from the dock and because
 16 of vessel movements or barge movements some of the
 17 taconite rolls out from the storage area where the
 18 rolls of steel are -- have dunnage, once I see that,
 19 then I know I have got a hazard, so I should remove it
 20 once I'm away from the port, it is my responsibility
 21 to protect my crew.

22 Q. You are not setting forth any type of opinion
 23 regarding what the legal obligations were of either
 24 Essar or McKeil?

25 A. I am not looking at contracts, I am just talking

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1 Q. Obviously you have not done that as we sit here
 2 today?

3 A. I have not done that.

4 Q. Okay. Going to paragraph 5 under your findings and
 5 opinions, you conclude that the dirt and taconite was
 6 transferred onto the barge's cargo deck then when they
 7 loaded the barge with the product, what is the basis
 8 of your opinion in paragraph 5?

9 A. Because the dirt wasn't there when they went in to
 10 load the coils of steel, the dirt was there after they
 11 loaded it and in the deposition testimony, in the
 12 photographs, it shows that there is taconite within
 13 the soil in the areas where the coils were stored and
 14 I don't believe there is any other operations
 15 discussed in the deposition testimony that would have
 16 provided an avenue for the dirt and the taconite to
 17 get onto the barge deck.

18 Q. Okay. Moving on to paragraph 6, you indicate among
 19 other things "McKeil Boats had a duty to ensure that
 20 the loading of the vessel did not produce slip and
 21 fall hazards," are you stating a legal duty in that
 22 statement?

23 A. I am not an attorney, I am from an engineering
 24 standpoint and from being a Coast Guard officer, if I
 25 am going to load things onto my vessel or onto my

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1 about from a functional feasible engineering and
 2 vessel safety standpoint, those should be the two that
 3 should be the primary entities responsible for
 4 removing the hazard.

5 Q. Do you have an opinion as to how McKeil should have
 6 gone about detecting the condition before leaving the
 7 dock?

8 A. Well, they could have inspected the area and
 9 determined that there is taconite in there and it
 10 should be removed.

11 Q. Which area?

12 A. The walking areas.

13 Q. And how should they have inspected it?

14 A. Well, you can visually inspect it.

15 Q. Okay. Do you know whether a visual inspection would
 16 have revealed the presence of taconite?

17 A. Well, here is -- this is the problem. You see this
 18 dirt, where is the taconite in there?

19 Q. I guess that is my question.

20 A. What I am saying is if they looked at it and the
 21 taconite was embedded in the dirt, they may have
 22 missed it. You would have to actually go down and
 23 push the dirt around to see the taconite if that was
 24 the only location where there was taconite. And the
 25 problem is the deposition testimony with Mr. Fournier

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1 says there is taconite all over the deck. Whether
2 that is true or not, I don't know. I tend to doubt
3 it.

4 Q. So is it your testimony that the ship was obligated
5 to sift through each of the piles of dirt on the deck
6 to see if there was taconite there?

7 A. No. What I am saying is the ship's master is
8 responsible and the owner of the ship is responsible
9 for making the vessel safe for the crew. You are
10 talking about walkways where the crew would be
11 walking, then they have an obligation, a duty when
12 they are away from the port or they are coming in to
13 make sure that it is not hazardous for the crew to go
14 down there and operate or the longshoremen to go down
15 and operate.

16 It would be hazardous for the vessel's crew
17 if they had to go down there for any reason during the
18 voyage, so they have a responsibility to make sure
19 that the decks -- the same thing if you spilled
20 hydraulic fluid on the deck, then the master would
21 have the responsibility to remove the hydraulic fluid
22 from the deck because it makes the deck very slippery,
23 even with a slip resistant surface, so you have to
24 clean that up.

25 Q. But let's assume for the purposes of my question that

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1 A. Yeah, once they are departing and they are in the
2 voyage, that is where the vessel's responsibility
3 exists and when they come in to off-load, that should
4 have already been taken care of.

5 Q. And I am just trying to be clear, is it your
6 testimony that you feel they had an obligation to do
7 that with respect to the entire deck of the barge?

8 A. Wherever the crew is going to walk or potentially
9 walk.

10 Q. Which would be the entire deck if you are talking
11 about during the discharge?

12 A. The cargo deck, right.

13 Q. Right.

14 A. Well, I think you can take a reasonable approach. If
15 you put a barrier so whatever is underneath the steel
16 coils cannot get to where the crew, the vessel's crew
17 is going to operate, then that would be acceptable,
18 okay? But where he fell was where the vessel crew
19 would be if they were moving around on the cargo deck.

20 I would not expect a crew to climb through
21 the steel coils. Once they are dunnage and they are
22 secured, the only reason why they would ever go in
23 there is if they lost security of the cargo, it is
24 shifting or it needs to be stabilized, so the crew on
25 the vessel would do that. Any walking surface on the

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1 the -- is it your testimony that they have an
2 obligation to sift through all of the dirt piles on
3 the entire deck in order to ensure there is no
4 taconite?

5 A. I would have expected the master of the ship to clean
6 the decks where they are walking and had they gone
7 through and cleaned that, they would have seen the
8 presence of taconite.

9 Q. Aren't they walking on the entire deck during the
10 discharge operation?

11 A. Discharge? You mean off-loading?

12 Q. Right. I am talking about during the voyage.

13 A. If they had to go down there during the voyage for
14 any reason, then that deck, with this contaminate and
15 the taconite is a hazard, so just from the vessel's
16 operation, the barge operation, if you had to put crew
17 on the barge when you were transporting it, it puts
18 them at risk. So before you take off, you should be
19 inspecting your dunnage, make sure that your cargo is
20 secured, appropriately stowed on the vessel, that you
21 have good center of gravity distribution, that the
22 barge is riding properly and seaworthy and in that
23 process, they should have detected the presence of
24 contaminate and cleaned it off.

25 Q. All right. You are talking about after loading?

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1 vessel has to be made safe for the crew.

2 Q. Okay. I apologize, maybe I am just not understanding
3 correctly, so let me back up and see if we can take it
4 one step at a time.

5 During the discharge of the cargo, there will
6 be individuals walking on all areas of the cargo deck
7 because as the cargo is removed, they need to walk and
8 remove the dunnage and so on, so are you saying that
9 the entire deck should be inspected for the presence
10 of taconite, I guess that is question No. 1,

11 subsequent to the loading and prior to the discharge?

12 A. Okay. For that particular question, yes, you want to
13 remove the hazards from the cargo when you are
14 off-loading the cargo. What we were talking about
15 before was the entity that is putting the cargo on the
16 vessel that is contaminating the deck should have
17 cleaned it. If I was the master, I would say you have
18 contaminated my vessel, you remove the contaminate and
19 I am not leaving here until you remove the
20 contaminate.

21 When they leave and the contaminate is still
22 there, they have left the loading port, now it is the
23 vessel's responsibility to take care of that
24 contaminate, that is why the master would have told
25 them -- should have told them, hey, you created this

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- 1 A. No.
- 2 Q. And you would have them go between the cargo that is
- 3 loaded?
- 4 A. No, I said that, I gave you an answer for that
- 5 before.
- 6 Q. You wouldn't do that?
- 7 A. I said if you can secure and make sure that that
- 8 contaminate doesn't come into my operating areas where
- 9 my crew is and it is not going to have any impact on
- 10 emergency operations, then I would accept it, as long
- 11 as I am sequestering that hazard away from my crew.
- 12 Q. And what if you can't sequester it?
- 13 A. Then I would make them fix it.
- 14 Q. No. 7, "Cleaning the barge cargo deck is both
- 15 technically and economically feasible and had been
- 16 done on a regular basis as part of normal operations,"
- 17 and I am kind of lost on what you are getting at
- 18 there?
- 19 A. Apparently the vessel cleaned the cargo deck before
- 20 arriving for taking on cargo, they had the equipment
- 21 and the experience in cleaning their decks, they could
- 22 have done it.
- 23 Q. They could have done it when?
- 24 A. They could have done it if the steel company did not
- 25 clean the contaminate up, then they could have done

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- 1 it.
- 2 Q. They could have cleaned --
- 3 A. If you are having a problem, as a master, I would be
- 4 calling the company and saying, what do you want me to
- 5 do, okay? They left contaminate all over the deck, do
- 6 you want them to clean it? You should call them and
- 7 tell them that per the contract, whatever is going on,
- 8 you fix it. If not, then I have got to fix it and
- 9 that is going to affect my sailing schedule, so the
- 10 company has to know that there is going to be a price
- 11 to fixing this problem and either the steel company --
- 12 even if the steel company fixes it, there is still a
- 13 price associated with that.
- 14 Q. So you are suggesting that the entire deck should
- 15 have been cleaned while the cargo was onboard?
- 16 A. I am saying where the crew -- okay. We are talking
- 17 about the master.
- 18 Q. Let's get it straight, the crew and the stevedores
- 19 are going to be all over the entire deck of the
- 20 vessel?
- 21 A. No, sir, not when you are sailing.
- 22 Q. But when you get to port to discharge?
- 23 A. We are talking about sailing. It is a layered
- 24 defense. The real problem started with the steel
- 25 company loading dirty coils into the vessel and

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- 1 dropping dirt and taconite onto the deck, they created
- 2 the hazard. Then the vessel should have known that
- 3 there was a hazard and they should have cleared the
- 4 working areas where the crew is going to be or if
- 5 there is emergency operations where they are going to
- 6 have to go, those should have been cleaned. What I am
- 7 saying is No. 7 is they had the technical capability
- 8 of doing it and they should have done it.
- 9 Q. You're assuming that the crew would be on the barge
- 10 during that transit time?
- 11 A. What are --
- 12 Q. Are you assuming the crew would be on the deck of the
- 13 barge?
- 14 A. No, what I am saying is if the crew would have to go
- 15 on there. What you don't do is expose your crew to
- 16 hazards. If in the course of operations the crew has
- 17 to get on the barge to either handle a problem with
- 18 the cargo or they have to have -- they have got a
- 19 problem with the lines or some towing operations
- 20 requires that the crew get on the barge, then -- and
- 21 even getting underway, in the process the crew is
- 22 going to be on the barge when you are getting
- 23 underway, so once the barge is loaded and the cargo is
- 24 secured, you still have crew from the boat, the vessel
- 25 onboard the barge because they have to prepare the

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- 1 barge to be towed and they have to have it secured.
- 2 Q. You are not going to be in the cargo deck though?
- 3 A. If my crew ever for any operation would have to get
- 4 on that barge, I want to make sure that the barge is
- 5 safe for them, that would be my responsibility as a
- 6 captain or a master.
- 7 Q. Okay. I guess I am trying to make the connection
- 8 between that and making the vessel safe for Mr. Kerns,
- 9 who was involved in a discharge operation?
- 10 A. We weren't talking about that.
- 11 Q. Well, that is what I was talking about.
- 12 A. No, we were talking about loading, then transporting
- 13 the barge to where it is going to discharge and we
- 14 only got that far and I said it is difficult once you
- 15 have the contaminate there and you are going to
- 16 off-load, then really who is responsible for creating
- 17 the contaminate. You should have prevented that
- 18 exposure in the first place, so it is really the steel
- 19 company should have prevented it or cleaned it up and
- 20 then the master has a responsibility of making sure
- 21 that the walking areas where the crew is going to be
- 22 and where Mr. Kerns fell was a walking area where the
- 23 crew could walk and if they had resolved that, then
- 24 Mr. Kerns wouldn't have fallen in the location where
- 25 he fell.

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1 Q. And why is that?

2 A. Because there wouldn't be any taconite and there

3 wouldn't be any dirt, the deck would be clean.

4 Q. Do we know where the taconite, assuming he slipped on

5 taconite, where on the deck of the barge he slipped

6 and where the taconite ultimately had come from?

7 MR. BEATON: Objection; compound question.

8 A. Well, first, the deposition testimony and the

9 presence of the taconite at the site where they are

10 loading the steel coils indicates that the transfer of

11 the taconite and the dirt came from loading the coils

12 into the vessel where the coils were stored in dirt

13 where there was taconite present in the dirt, so

14 that's the most logical -- I mean, there doesn't seem

15 to be any other explanation for getting the taconite

16 onto the deck because they argued that the deck was

17 clean when they arrived to pick up the steel coils, so

18 the taconite was transferred into the vessel with the

19 loading of the steel coils.

20 Then, at that point, that is when either

21 those coils should have been cleaned before they got

22 onto the vessel, so they would clean off the dirt and

23 the taconite from the coils when the forklifts or the

24 Hi-Los were bringing them in. If you don't do that,

25 then you are transferring and spilling it as you go

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1 into the vessel and storing the cargo. And at that

2 point, that is what I am saying, that the company

3 should have cleaned up the mess that they created and

4 the master should have required that they do it.

5 Q. All right. I am not being very good with my

6 questions, I think, because I am not getting an answer

7 to them and it is probably my fault.

8 A. Well, I will try to do a better job, too.

9 Q. So you were saying then if they had cleaned the area,

10 and I assume you are talking about the area where

11 there was no cargo stored, where the Hi-Lo would have

12 been kept, if -- I understood you to say if they

13 cleaned that area --

14 A. Who is "they"?

15 Q. Anybody, whether it is the cargo loading company or

16 whether it is the vessel, if that area had been

17 cleaned, I understood you to say Mr. Kerns would not

18 have slipped and fallen, is that what you said or no?

19 A. Well, his testimony is that he slipped and fell in

20 the area where the cargo wasn't, where he was walking

21 around where there wasn't -- he wasn't walking in

22 between the coils, so he was on a deck that didn't

23 have any coils, part of the deck that didn't have any

24 cargo, so if they had cleaned it up, he wouldn't have

25 been exposed to the dirt and the taconite.

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1 Q. Okay.

2 A. And the coefficient of friction testing with his

3 boots indicates that he would have had adequate

4 coefficient of friction that you would not encounter

5 that kind of fall that he described, so he wouldn't

6 have fallen.

7 Q. All right. Assuming for purposes of my question that

8 that is true?

9 A. What is true?

10 Q. That he was injured in the area where the coils were

11 not stored?

12 A. Okay.

13 Q. It is my appreciation of the testimony that the

14 discharge operation shifted coils from one part of the

15 barge back over to that clear area, if you will, and

16 the sea hook came down, lifted them out, so the coils

17 were being brought back in from various locations on

18 the barge, being brought back into that area where no

19 cargo had previously been stowed, so how do we know

20 that the taconite on which he claims to have fallen

21 was there from the moment of loading and when the

22 vessel departed the dock at Essar or whether it was

23 brought on during the off-loading process when coils

24 were shifted to that neutral area?

25 MR. BEATON: Objection; mischaracterizes the

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1 testimony, assumes facts not in evidence.

2 Q. Do you understand my question?

3 A. I am not sure. What I am hearing from your question

4 is that the contamination was onboard the vessel,

5 okay, which I think you are saying is that you can

6 spread the contamination during the off-load process?

7 Q. Correct.

8 A. Okay. And that is why I am saying it was very

9 critical to prevent the contamination in the first

10 place. If you know how you are going to remove the

11 cargo, then you would want to get rid of the

12 contamination at the point of loading, then you don't

13 have to worry about it because there is no

14 contamination.

15 And then I said if you are moving the barge,

16 then as a master, I would definitely want to make sure

17 that my crew is protected if they had to get onboard

18 the barge, that there wouldn't be a slip and fall

19 injury because of contaminate on the expected walking

20 surfaces of the deck.

21 Now, where the -- how the contaminants got to

22 the walking deck, you know, whether that was in the

23 off-loading process or during the loading process,

24 it -- from my recollection of the testimony, the dirt

25 was present, the dirt was there when they left port,

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1 degree and he is walking prior to the slip, then he
 2 is -- he will be making adjustments in his gait
 3 pattern to deal with the motion of the vessel, as well
 4 as the walking surface, but I don't have any vibration
 5 vessel motion information.

6 Q. Do you believe the surface of the barge presented a
 7 hazard on the day that Mr. Kerns fell?

8 A. What surface?

9 Q. The surface of the barge.

10 A. The barge has lots of surfaces.

11 You are talking about the walking surface?

12 Q. Yes.

13 A. And the question was?

14 Q. The actual deck surface of the barge, do you believe
 15 that it presented a hazard when it came into port at
 16 Nicholson dock on the day of Mr. Kerns fall?

17 A. Well, to the extent that the debris, the dirt and the
 18 taconite is present coming into the port, that would
 19 have been a hazard.

20 Q. And what do you base that on?

21 A. Well, the coefficient of friction testing and the
 22 fact that he didn't fall until he had an abrupt change
 23 in the coefficient of friction.

24 Q. The fact that no one else fell during the entire time
 25 of the unloading of the steel coils, does that alter

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1 your opinion at all as to whether or not you believe
 2 the condition of the barge was safe or unsafe, hazard
 3 no hazard to the stevedores when they were unloading
 4 the steel coils?

5 MR. BEATON: Asked and answered.

6 A. Well, events, accident events follow a Poisson
 7 distribution, which means that you can have a great
 8 deal of variability between exposure to a hazard and
 9 before an accident or event occurs, so I really can't
 10 say anything about the day of the accident because I
 11 don't know how many people were walking, I don't know
 12 what the actual exposure was, I don't know where they
 13 were walking, I don't know where the taconite
 14 distribution was in the dirt, I don't know if this
 15 area where he walked was the only location of the
 16 taconite, so for me to give you any kind of credible
 17 answer on that, I really can't because there are too
 18 many variables involved in that.

19 Q. What level of responsibility or duty would you assign
 20 to Nicholson, Mr. Kerns' employer, to make sure that
 21 the surface area of the deck where he had to walk was
 22 free from unnecessary hazards before he was allowed on
 23 the barge to start working?

24 A. Well, my understanding is the responsibility that he
 25 had was executed by having a supervisor come out and

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1 look at the area and clear it for the operations, that
 2 they weren't allowed to start off-loading until the
 3 supervisor said it was okay to do it.

4 The supervisor performed a visual inspection.

5 Q. Do you think that was adequate for them to fulfill
 6 their obligation?

7 A. That depends on what they expect. If they have
 8 worked with a minor amount of dirt on the deck and
 9 they haven't had problems with it and the supervisor's
 10 experienced with that and they thought they could
 11 perform those operations safely with the dirt present,
 12 then that's -- that would have been okay.

13 I -- you know, my experience now with this
 14 taconite is that it could be very difficult to see.
 15 It picks up the ambient dust and dirt and it is like a
 16 chameleon, it tends to match the color of the debris
 17 that it is in, which would make it difficult to see
 18 when you do a visual inspection.

19 Q. Would you expect a stevedore with 30-plus years of
 20 experience to have -- that works in a dock that has
 21 accepted steel coils before coming from steel plants
 22 to think to look more than just a cursory review?

23 A. No. Because if the steel coils were stored in an
 24 area where there wasn't dirt or taconite, you wouldn't
 25 expect that contaminate on the vessel.

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1 Q. But would you expect a stevedore with 30 years
 2 experience to ever encounter situations where the
 3 coils have been loaded from a location other than
 4 where they were stored either on concrete or metal
 5 trays?

6 A. What is the question?

7 Q. Certainly. If you have got a stevedore with 30 years
 8 experience and they are now a foreman and in those 30
 9 years they have accepted and viewed hundreds and
 10 thousands of cargo, including steel coils, would you
 11 expect that stevedore to have ever encountered a
 12 situation where the steel coils may have been stored
 13 prior to the loading on the barge on something other
 14 than steel trays or concrete?

15 MR. BEATON: Objection; one, it assumes facts
 16 not in evidence and, two, this is outside of his
 17 expertise. He hasn't been asked to testify about
 18 this.

19 MR. JORDAN: He has already testified, put
 20 himself out as an expert as to what the stevedore --

21 MR. BEATON: As a longshoreman --

22 MR. JORDAN: Well, he did.

23 MR. BEATON: Not what they did for 30 years.
 24 We already know --

25 MR. JORDAN: We don't need to testify for

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1 him.

2 MR. BEATON: You ask a proper question; I
3 will give you proper objections.

4 MR. JORDAN: Form and foundation is the
5 proper one.

6 A. I am trying to be helpful.

7 Q. This is nothing involving you directly, so --

8 A. But the question you are really asking me is a signal
9 protection question, which is a big area in human
10 factors engineering and the question is whether or not
11 a person could have been able to detect a signal,
12 which is the hazard, the taconite here.

13 Q. Or think to look for it?

14 A. Well, yes. So you have to have cues. First of all,
15 you have to have knowledge that it is present, it is
16 going to be there.

17 Q. It could be there?

18 A. Potentially.

19 Q. And it could be, that is where the 30 years
20 experience would give somebody the potential
21 experience?

22 A. And the criteria, the decision making when you are
23 doing a perceptual task, looking for a hazard, it is
24 influenced by not only the probability of distribution
25 of the hazard, but its conspicuity or what we call

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1 Q. If that was fulfilled, do you believe that Essar
2 fulfilled its obligation?

3 A. Yeah, if they saw it. I think the problem here with
4 all of the parties, they are all claiming that they
5 didn't see it. And that is possibly the case because
6 as you can see right here, the taconite will embed
7 within the dirt and you don't see it, so if they
8 thought a little bit of dirt on the deck was okay, it
9 wasn't hazardous, then Mr. McMasters would be correct.

10 If they saw the taconite and they knew it was
11 there -- let me finish my question -- then they would
12 have intervened, but based on what I am seeing here,
13 if they just did a cursory visual inspection and saw
14 some dirt on there, they didn't see the taconite
15 embedded in the dirt, they wouldn't know that there
16 was a hazard.

17 Q. My question actually was before it actually gets
18 loaded onto the barge, do you recall testimony that
19 when the coils were being lifted from the ground,
20 whether dirt or from steel rack, that once they are
21 lifted, before they actually get to the barge for the
22 pass through, if they see any debris on the coils,
23 that they would brush them off?

24 A. I don't actually remember that at this moment.

25 Q. If Mr. McMaster would provide that testimony that if

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1 signal D prime, which is the signal to noise ratio and
2 then there is the expectancy, so if they are working
3 everyday and they almost never see any taconite, what
4 that does is it makes -- it helps them -- well, what
5 it does is it shoves their Beta way up there so they
6 are not expecting it, so they don't tend to look for
7 it and it would have to be a high signal to noise
8 ratio.

9 So, for example, let's say the taconite was
10 white and you would see it embedded in dark dirt, that
11 would be different. They hadn't seen that before, so
12 they would go down and explore more. But when your
13 cues, your visual cues, when you are doing the
14 inspection are indicating that today is no different
15 than yesterday or the day before or the day before and
16 so forth, what it does is it moves your Beta up so
17 that you are not going to think there is a hazard.
18 You don't expect one, you don't see any evidence of a
19 hazard and so you think it is safe.

20 Q. Did you read Mr. McMaster's deposition?

21 A. I did.

22 Q. Do you recall any testimony in there that if any of
23 the coils seemed to have any debris on them, they
24 would be cleaned off before loaded?

25 A. Yes.

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1 they lifted a coils and for some reason dirt, rocks,
2 taconite, anything was affixed to it or resting on it,
3 then that was brushed off, do you believe that Essar
4 would have fulfilled its obligation for making sure
5 that the area is safe for loading?

6 A. Well, if they did that, my problem I have is that
7 Mr. Kerns had taconite, so the taconite is on the
8 vessel and the only place to get the taconite is the
9 place where the coils were loaded.

10 Q. Is it your --

11 MR. BEATON: Let him answer.

12 Q. I thought you were finished. My apologies.

13 A. So if that is the source of the taconite, it had to
14 get onto the vessel. So if that were the case, if he
15 was correct, they were brushing it off, then there
16 shouldn't be any dirt or taconite on the vessel, but
17 there was.

18 Q. Do you know definitively that the barge was
19 completely clear of any debris before the loading?

20 A. Of any debris?

21 Q. Dirt, taconite, anything?

22 A. I think my recollection of the barge coming in is it
23 was their responsibility to have a clean barge. I
24 don't remember at this moment -- I thought -- my
25 recollection was that somebody testified that it was

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- 1 clean, that they had cleaned it coming in.
- 2 Q. But what clean means, is that spic and span, no
- 3 debris, some debris, you don't know?
- 4 A. I don't know.
- 5 Q. That is all I am trying to get at.
- 6 Are there any particular chapters, articles
- 7 or journals that you have participated in the drafting
- 8 of that you believe apply to the facts scenario of
- 9 this case?
- 10 A. Well, yes. I wrote a chapter for the American
- 11 Society of Safety Engineers handbook that addresses
- 12 the heel strike, you know, the gait sequence -- maybe
- 13 that was another book. That might have been the
- 14 injury epidemiology chapter for the Johns Hopkins
- 15 textbook.
- 16 Q. Is that something that you can get your hands on and
- 17 get to us?
- 18 A. Yeah. If you want, I can get my CV and circle them
- 19 or indicate.
- 20 Q. I am not sure if I am going to be able to find them,
- 21 that is the thing.
- 22 A. Yeah, I will make a copy and send it to you.
- 23 Q. I appreciate it.
- 24 A. Sure.
- 25 Q. And that would go to any of the chapters, articles,

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- 1 journal entries, anything that you believe would have
- 2 the same general set of facts or at least application,
- 3 whether it is heel strike, coefficient of friction,
- 4 that would be pertinent to this case that you believe
- 5 your expert opinion in some way is based on, that type
- 6 of training and knowledge?
- 7 MR. BEATON: And you will be paying him to
- 8 accumulate all of this information?
- 9 MR. JORDAN: I would like to think he has it
- 10 all handy in his office.
- 11 MR. BEATON: I'm sure he has got to look for
- 12 it, it involves a lot of articles and a lot of books,
- 13 so if you want him to accumulate it, are you willing
- 14 to pay him?
- 15 MR. JORDAN: No, I want him to be able to
- 16 come up with the ones that are pertinent as an expert.
- 17 A. Not to create an argument, but it will take a little
- 18 bit of time. I don't keep copies of the articles that
- 19 I publish because I know they are always in the
- 20 library, so if I need to go back and since I know the
- 21 information, I usually don't have to reread my own
- 22 work, but I might have them.
- 23 Q. Let's start with you indicating on your CV which ones
- 24 you believe are pertinent and if you have them readily
- 25 available, we will start with that and if you have to

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- 1 start digging around, I can do that first and see if I
- 2 can come up with it and we can split the effort and
- 3 Bruce will be happy.
- 4 MR. MILES: Copy me on all of that.
- 5 MR. BEATON: I assume it is all going to me
- 6 and then I will of course give it to everyone else.
- 7 A. And, of course, I teach the stuff in my biomechanics
- 8 courses, so I have students read articles, so I don't
- 9 know if you want some articles that explain or provide
- 10 the foundation for some --
- 11 Q. If you have it handy, sure, you can toss that in.
- 12 A. How about if I list a series of articles that you can
- 13 easily get from the university library?
- 14 Q. That is fine.
- 15 MR. BEATON: Can we go off of the record for
- 16 a second.
- 17 MR. JORDAN: Sure. Off of the record.
- 18 (Discussion off the record.)
- 19 MR. JORDAN: Back on the record.
- 20 Q. In your report, page 17, numbered paragraph 5, I know
- 21 counsel already went over one aspect, but I have to
- 22 follow-up. You specifically state --
- 23 A. I am sorry, page 17?
- 24 Q. Numbered paragraph 5 of your findings and opinions.
- 25 A. Yeah.

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- 1 Q. And you state, "Essar Steel stored their metal coils
- 2 of product in dirt and the presence of taconite. When
- 3 they loaded the barge with their product, they
- 4 transferred dirt and taconite onto the barge's cargo
- 5 deck," was that more or less correct?
- 6 A. Yes.
- 7 Q. That second and last sentence that I read, how is it
- 8 that you are able to state that as an expert within
- 9 your field and to a reasonable degree of medical --
- 10 reasonable degree of scientific and engineering
- 11 certainty?
- 12 A. Okay. Well, the deposition testimony states that
- 13 they had the coils in the dirt.
- 14 Q. I understand that as the first part, but I was
- 15 confining just to the second sentence where you say it
- 16 was transferred, what is it in your training that
- 17 allows you to sit here today as an expert to reach the
- 18 conclusion within a reasonable degree of scientific
- 19 and engineering certainty that indeed the taconite and
- 20 dirt was transferred to the barge's deck with the
- 21 loading of the steel coils?
- 22 A. Well, the deck was clean, per deposition testimony;
- 23 the only thing that was put in the barge was the
- 24 coils; the coils were sitting in dirt; there is photos
- 25 of taconite mounds and taconite around the entry to

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1 the barge; if you look at the photos, for example,
2 this one, which there is nothing on here telling me
3 where this photo came from, but it is a photo of a
4 coil --

5 MR. BEATON: Let the record reflect that that
6 is one of the photographs provided by McKeil that is
7 taken at Essar dock where the Hi-Lo was loading one of
8 the coils onto the NIAGARA SPIRIT.

9 MR. JORDAN: Further let the record reflect
10 we have no idea when it was taken, time of year or
11 anything else and any potential relevancy to this
12 case.

13 A. Okay. So the deck is clean, they load the coils on,
14 there is dirt on the deck and taconite is found at the
15 time of the accident, the only source of the taconite
16 would be at the loading port.

17 Q. I guess my question is a little bit more refined is
18 what is it about your training in presenting here
19 today as an expert versus just a layperson saying I am
20 told the deck was clean, the coils were loaded, dirt
21 afterwards, ergo, ipso facto, what is it about your
22 specific training and expertise that allows you to
23 make that statement as an expert versus just any
24 layperson making the same conclusionary result?

25 A. Well, just because I am an expert doesn't mean that

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1 the deck and the taconite and dirt.

2 Q. Post hoc ergo propter hoc.

3 A. So when you are doing accident reconstruction, what
4 you do is you reject solution spaces and what you try
5 to do is use physical evidence or testimony and
6 corroborate the testimony so that you close the
7 solution space to the smallest space possible so that
8 there is only one explanation left in that space that
9 you can't reject.

10 So in this particular case, I have no reason
11 to reject the hypothesis that the coils that were
12 sitting in the dirt where taconite was present didn't
13 contribute to the contamination of the deck with dirt
14 and taconite. And I don't think there is any dispute
15 that there was taconite present on the deck at the
16 time that the barge was brought in to off-load.

17 And I guess the last thing is if they weren't
18 stored in that area based on how they transferred the
19 coils using the fork trucks, that are sometimes
20 referred to as Hi-Los, then there wouldn't have been
21 any contamination, you would have just had a direct
22 transfer in with clean coils.

23 Q. I believe you answered this in a roundabout way, at
24 least that is how I got it, but let me try to refine
25 it. As I understand correctly that the risk of fall

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1 something that even a layperson would understand
2 doesn't fall within my domain to comment on.

3 Q. And I am just trying to understand, what is it about
4 your training or expertise that allows you to reach
5 that conclusion as an expert versus as a layperson
6 with the two getting melded together?

7 A. In accident reconstruction, which I was trained at
8 graduate school in Michigan to perform, part of the
9 accident reconstruction is trying to meld physical
10 evidence with testimony to understand a process or
11 some element that is related to the accident.

12 And in this case, the testimony says that the
13 deck was clean. The photographic evidence shows that
14 there is taconite around the surface. There are
15 photographs of the -- I am just looking for one right
16 now, but there are photographs of the coil in the
17 surface of the dirt outside of the barge. I can't see
18 one right now, but there are photographs of the coils
19 in the dirt, which corroborates the statements made by
20 Mr. McMasters, who stated that they positioned the
21 coils in the dirt area to expedite loading of the
22 barges. That proximity of dirt and to taconite and
23 the fact that there was dirt and taconite on the barge
24 after being loaded with the coils indicates that that
25 is a plausible explanation for the contamination of

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1 in your opinion does not change for a given
2 coefficient of friction dependent upon one's height,
3 weight, gait, when they encounter that unknown
4 substance?

5 A. I think what I said is a person's body mass, their
6 weight doesn't affect your measurement of the
7 coefficient of friction.

8 Q. I understand the coefficient of friction doesn't
9 change, but does the likelihood of one falling when
10 encountering a given coefficient of friction change
11 dependent upon one's height and weight and length of
12 stride?

13 MR. BEATON: Objection; compound question.

14 A. Theoretically, no, but I have never seen any study
15 that would argue that somebody's body mass or their
16 stature affects their ability to recover from or
17 prevent a fall.

18 (Exhibits 3 and 4 were marked for
19 identification.)

20 Q. For the record, we had marked, just so we can put it
21 in the record, Exhibit 3 and this is your fee
22 schedule; is that accurate?

23 A. Yes.

24 Q. And Exhibit 4 is your CV that you were kind enough to
25 give us today?